Abstracts

Efficient admittance matrix representation of a cubic junction of rectangular waveguides

In this paper we describe a very efficient multi-mode admittance matrix representation of a six-port cubic junction composed of the orthogonal intersection of three rectangular waveguides. The formulation is based on the theory of cavities and yields very simple closed-form analytical expressions for all matrix elements. In addition to theory, the application of the results obtained to the special cases of E- and H-plane T-junctions and to the magic-T junction are also discussed indicating how the representations obtained are indeed very accurate and numerically efficient.

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